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ZIMMERMAN, GLENN	
ART UNIT	**PAPER NUMBER**
2879	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/680,291	MORAVSKY ET AL.	
	Examiner	Art Unit	
	Glenn Zimmerman	2879	MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-96* is/are pending in the application.

4a) Of the above claim(s) *1-66* is/are withdrawn from consideration.

5)☒ Claim(s) *68-89* is/are allowed.

6)☒ Claim(s) *67 and 90-96* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

Amendment, filed on October 9, 2003, has been entered and acknowledged by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 67 and 90-96 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. U.S. Patent 6,471,936.

Regarding claim 67, Chen et al disclose a solid substance composed by more than one half by weight of hollow carbon nanotubes having walls consisting essentially of two layers of carbon atoms **(col. 4 lines 25-35; col. 7 lines 36-41;claim 19;abstract)**. The solid substance is inherently more than one half by weight of hollow carbon nanotubes as that is all they mention in the claim so it is more than one half by weight but entirely by weight.

The examiner notes that the Chen et al. reference references multi-walled nanotubes of multiple graphene sheets. The examiner notes that multi- and multiple are indicia of a range MPEP 2131.03. The examiner notes that the dictionary definition of multi- is many, much, multiple or more than one. The examiner notes that the definition of multiple is having, relating to, or consisting of more than one individual, element, part, or other component; manifold. The examiner notes that multi- and multiple includes two and would therefore include two graphene layers and would therefore include DWNTs. The examiner thus concludes that Chen et al. does disclose the limitations of Claim 67. The examiner notes that the carbon-based material of Chen et al. comprises carbon nanotubes of either single or multiple walls in claim 19. Therefore one can choose the carbon-based material to be all multiple walls and then one can choose all double walled carbon nanotubes as the double is covered under the wording multiple

Regarding claims 90, Chen et al. disclose a fullerene material predominantly comprised double walled carbon nanotubes **(col. 4 lines 25-35)** produced by the method of claim 1.

As to limitation producted by the method of claim 1 in claim 90, it is the process step incorporated into which renders the claim as a product-by-process.

The courts have been holding that: "- -In spite of the fact that a product-by-process claim may recite only process limitation, it is the product which is covered by the claim and not the recited process steps- - . (In re Hughes, 182 USPQ 106) - -". Also - - Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be

new and unobvious. (In re Pilkington, 162 USPQ 147) - -." Accordingly, "- - a rejection based on 35 U.S. C. section 102 or alternatively on 35 U.S. C. section 103 of the statute is eminently fair and acceptable." (In re Brown and Saffer, 173 USPQ 685 and 688). - - The determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made- -. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985).

As such, **no** patentable weight is given to process steps recited in claim 90.

Regarding claims 91, Chen et al. disclose a fullerene material predominantly comprised double walled carbon nanotubes **(col. 4 lines 25-35)** produced by the method of claim 2.

As to limitation producted by the method of claim 2 in claim 91, it is the process step incorporated into which renders the claim as a product-by-process.

The courts have been holding that: "- -In spite of the fact that a product-by-process claim may recite only process limitation, it is the product which is covered by the claim and not the recited process steps- - . (In re Hughes, 182 USPQ 106) - -". Also - - Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. (In re Pilkington, 162 USPQ 147) - -." Accordingly, "- - a rejection based on 35 U.S. C. section 102 or alternatively on 35 U.S. C. section 103 of the statute is eminently fair and acceptable." (In re Brown and Saffer, 173 USPQ 685 and 688). - - The determination of the patentability of product-by-process claim is based on the

product itself rather than on the process by which the product is made- -. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985).

As such, **no** patentable weight is given to process steps recited in claim 91.

Regarding claims 92, Chen et al. disclose a fullerene material predominantly comprised double walled carbon nanotubes **(col. 4 lines 25-35)** produced by the method of claim 3.

As to limitation producted by the method of claim 3 in claim 92, it is the process step incorporated into which renders the claim as a product-by-process.

The courts have been holding that: "- -In spite of the fact that a product-by-process claim may recite only process limitation, it is the product which is covered by the claim and not the recited process steps- - . (In re Hughes, 182 USPQ 106) - -". Also - - Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. (In re Pilkington, 162 USPQ 147) - -." Accordingly, "- - a rejection based on 35 U.S. C. section 102 or alternatively on 35 U.S. C. section 103 of the statute is eminently fair and acceptable." (In re Brown and Saffer, 173 USPQ 685 and 688). - - The determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made- -. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985).

As such, **no** patentable weight is given to process steps recited in claim 92.

Regarding claims 93, Chen et al. disclose a fullerene material predominantly comprised double walled carbon nanotubes **(col. 4 lines 25-35)** produced by the method of claim 7.

As to limitation producted by the method of claim 7 in claim 93, it is the process step incorporated into which renders the claim as a product-by-process.

The courts have been holding that: "- -In spite of the fact that a product-by-process claim may recite only process limitation, it is the product which is covered by the claim and not the recited process steps- - . (In re Hughes, 182 USPQ 106) - -". Also - - Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. (In re Pilkington, 162 USPQ 147) - -." Accordingly, "- - a rejection based on 35 U.S. C. section 102 or alternatively on 35 U.S. C. section 103 of the statute is eminently fair and acceptable." (In re Brown and Saffer, 173 USPQ 685 and 688). - - The determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made- -. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985).

As such, **no** patentable weight is given to process steps recited in claim 93.

Regarding claims 94, Chen et al. disclose a fullerene material predominantly comprised double walled carbon nanotubes **(col. 4 lines 25-35)** produced by the method of claim 11.

As to limitation producted by the method of claim 11 in claim 94, it is the process step incorporated into which renders the claim as a product-by-process.

The courts have been holding that: "- -In spite of the fact that a product-by-process claim may recite only process limitation, it is the product which is covered by the claim and not the recited process steps- - . (In re Hughes, 182 USPQ 106) - -". Also - - Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. (In re Pilkington, 162 USPQ 147) - -." Accordingly, "- - a rejection based on 35 U.S. C. section 102 or alternatively on 35 U.S. C. section 103 of the statute is eminently fair and acceptable." (In re Brown and Saffer, 173 USPQ 685 and 688). - - The determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made- -. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985).

As such, **no** patentable weight is given to process steps recited in claim 94.

Regarding claims 95, Chen et al. disclose a fullerene material predominantly comprised double walled carbon nanotubes **(col. 4 lines 25-35)** produced by the method of claim 15.

As to limitation producted by the method of claim 15 in claim 95, it is the process step incorporated into which renders the claim as a product-by-process.

The courts have been holding that: "- -In spite of the fact that a product-by-process claim may recite only process limitation, it is the product which is covered by the claim and not the recited process steps- - . (In re Hughes, 182 USPQ 106) - -". Also - - Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be

new and unobvious. (In re Pilkington, 162 USPQ 147) - -." Accordingly, "- - a rejection based on 35 U.S. C. section 102 or alternatively on 35 U.S. C. section 103 of the statute is eminently fair and acceptable." (In re Brown and Saffer, 173 USPQ 685 and 688). - - The determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made- -. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985).

As such, **no** patentable weight is given to process steps recited in claim 95.

Regarding claims 96, Chen et al. disclose a fullerene material predominantly comprised double walled carbon nanotubes **(col. 4 lines 25-35)** produced by the method of claim 18.

As to limitation producted by the method of claim 18 in claim 96, it is the process step incorporated into which renders the claim as a product-by-process.

The courts have been holding that: "- -In spite of the fact that a product-by-process claim may recite only process limitation, it is the product which is covered by the claim and not the recited process steps- - . (In re Hughes, 182 USPQ 106) - -". Also - - Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. (In re Pilkington, 162 USPQ 147) - -." Accordingly, "- - a rejection based on 35 U.S. C. section 102 or alternatively on 35 U.S. C. section 103 of the statute is eminently fair and acceptable." (In re Brown and Saffer, 173 USPQ 685 and 688). - - The determination of the patentability of product-by-process claim is based on the

product itself rather than on the process by which the product is made- -. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985).

As such, **no** patentable weight is given to process steps recited in claim 96.

Allowable Subject Matter

Claims 68-89 are allowed.

Regarding claim 68, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests an electron-emissive material including the combination of all the limitations as set forth in claim 68, and specifically a surface consisting primarily of a plurality of emissive tubules wherein each of the plurality of emissivel tubules is generally nanotubes with a controlled number of graphene layers consisting essentially of two layers of carbons atoms could not be found elsewhere in prior art.

Regarding claims 69-84, claims 69-84 are allowed for the reasons given in claim 68, because of their dependency status on claim 68.

Response to Arguments

Applicant's arguments filed October 9, 2003 have been fully considered but they are not persuasive.

The applicant asserts that Chen et al. "does not teach, disclose or suggest double walled nanotubes". The examiner notes that Chen et al. references multi-walled

nanotubes of multiple graphene sheets. The examiner notes that multi- and multiple are indicia of a range MPEP 2131.03. The examiner notes that the dictionary definition of multi- is many, much, multiple or more than one. The examiner notes that the definition of multiple is having, relating to, or consisting of more than one individual, element, part, or other component; manifold. The examiner notes that multi- and multiple includes two and would therefore include two graphene layers and would therefore include DWNTs. The examiner thus concludes that Chen et al. does disclose the limitations of Claim 67. The examiner notes that the carbon-based material of Chen et al. comprises carbon nanotubes of either single or multiple walls in claim 19. Therefore one can choose the carbon-based material to be all multiple walls and then one can choose all double walled carbon nanotubes as the double is covered under the wording multiple.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hafner et al. U.S. Patent Application Publication 2002/0112814 discloses Fabrication of Nanotube Microscopy Tips. The examiner notes that Hafner discloses that Multi-Walled Nanotubes can have only two graphene layers and therefore be DWNTs **(paragraph 51)**. Jin et al. U.S. Patent 6,465,132 discloses an Article Comprising Small Diameter Nanowires and Method For Making the Same.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (703) 308-8991. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is n/a.

Glenn D. Zimmerman

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